



DT11 Rec'd PCT/PTO JUN 18 2002

PCT

Docket No. 55908 (46322)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS: Julian Schofield, et al. EXAMINER: Not Yet Assigned  
SERIAL NO. 09/868,879 GROUP: Not Yet Assigned  
FILED: 22 June 2001  
FOR: GLYCOSYL PHOSPHATIDYL INOSITOL SPECIFIC PHOSPHOLIPASE D  
PROTEINS AND USES THEREOF

\*\*\*\*\*

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to Assistant Commissioner for Patents and Trademarks, Washington, D.C. 20231 on June 14, 2002,

By: Patricia A. Barnes  
Patricia A. Barnes

\*\*\*\*\*

Honorable Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Date June 14, 2002

Dear Sir:

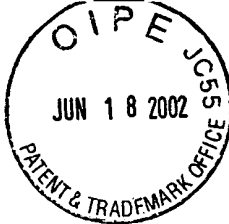
**INFORMATION DISCLOSURE STATEMENT**

In accordance with the provisions of 37 C.F.R. §§1.56 and 1.97, Applicant herewith submits the publications and/or patents shown on the attached form PTO-1449, for consideration by the Examiner in connection with the examination of the above-identified patent application.

**REMARKS**

In accordance with the provisions of 37 C.F.R. §1.97, this statement is being filed (CHECK ONE):

X (1) within three (3) months of the **Filing Date** or before the mailing date of the **First Office Action** on the merits; or



— (2) after the period defined in (1) but before the mailing date of a **Final Rejection** or **Notice of Allowance**, and the requisite Certification or fee under Rule 1.17(p), namely **\$180.00**, is included herein; or

— (3) after the mailing date of a **Final Rejection** or **Notice of Allowance** but before the payment of the **Issue Fee**, and the requisite Certification, petition, and petition fee are included herein.

It is respectfully requested that each of the documents shown on the attached form(s) PTO-1449 be made of record in this application. Copies of these documents (CHECK ONE):

X are enclosed herewith; or


— are in the file of related application Serial No. filed \_\_\_\_\_, and are thus not being resubmitted herein.

Should any fee associated with the submission of this paper not be attached hereto as a check, the Commissioner is authorized to charge the missing fee to our Deposit Account, No. 04-1105. Any overpayments should be credited to said Deposit Account. Early examination and allowance of the present application are respectfully solicited.

Respectfully submitted,

Date:

14 JUN 2002

  
Robert L. Buchanan, Esq.

Registration No.: 40,927

Attorney for Applicants

Dike, Bronstein, Roberts & Cushman - IP Practice Group of

EDWARDS & ANGELL, LLP

P. O. Box 9169

Boston, MA 02209

Tel. (617) 439-4444

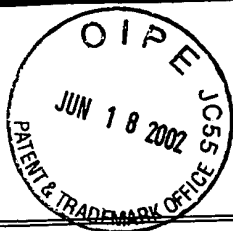
Fax (617) 439-4170 / 7748

Customer No. 21874



21874

PATENT TRADEMARK OFFICE



FORM PTO-1449

## INFORMATION DISCLOSURE STATEMENT

ATTY DOCKET NO.

55908 (46322)

SERIAL NO.

09/868,879

APPLICANT(S) Julian Schofield, et al.

FILING DATE 22 June 2001

GROUP NO. Not Yet Assigned

## UNITED STATES PATENT DOCUMENTS

| EXAM.<br>INITIAL | DOCUMENT<br>NUMBER | DATE     | NAME          | CLASS | SUBCLASS | FILING DATE IF<br>APPROPRIATE |
|------------------|--------------------|----------|---------------|-------|----------|-------------------------------|
| AA               | 5,418,147          | 05/23/95 | Huang, et al. | 435   | 69.1     | 03/31/92                      |

## FOREIGN PATENT DOCUMENTS

| DOCUMENT<br>NUMBER | DATE     | COUNTRY | CLASS | SUBCLASS | TRANSLATION<br>YES/NO |
|--------------------|----------|---------|-------|----------|-----------------------|
| BA WO 99/47565     | 23/09/99 | PCT     |       |          | Y                     |
| BB 0 477 739 A2    | 01/04/92 | EP      | C12N  | 15/55    | Y                     |

## OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

|    |   |
|----|---|
| CA | Lierheimer, et al., "The neuronal cell-adhesion molecule axonin-1 is specifically released by an endogenous glycosylphosphatidylinositol-specific phospholipase"; Eur. J. Biochem. Vol. 243, pp. 502-510, 1997. |
| CB | Scallon, et al., "Primary Structure and Functional Activity of a Phosphatidylinositol-Glycan-Specific Phospholipase D, Science, Vol. 252, pp 446-448, 1991  |
| CC | Jones, et al., "Glycosyl-phosphatidylinositol-phospholipase Type D: A Possible Candidate for the Generation of Second Messengers", Biochem. And Biophys. Res. Comm., vol. 233, pp 432-437, 1997.                |
| CD | Caro, et al., "Isolation and Partial Characterisation of Insulin-Mimetic Inositol Phosphoglycans from Human Liver", Biochem. And Molec. Med., vol. 61, pp 214-228, 1997.  |
| CE | Rademacher, et al., "Inositolphosphoglycan second messengers", Brazilian J Med Biol Res, vol 27, pp 327-341, 1994.  |
| CF | Deeg, et al., "Regulation of Glycosylphosphatidylinositol-Specific Phospholipase D Secretion from BTC3 cells", Endocrinology, Vol. 136, No. 2, pp 819-826, 1997.  |

EXAMINER:

DATE:



|   |  |                                       |                            |
|---|--|---------------------------------------|----------------------------|
| FORM PTO-1449<br>INFORMATION DISCLOSURE STATEMENT |  | ATTY DOCKET NO.                       | SERIAL NO.                 |
|   |  | 55908 (46322)                         | 09/868,879                 |
|   |  | APPLICANT(S) Julian Schofield, et al. |                            |
|   |  | FILING DATE 22 June 2001              | GROUP NO. Not Yet Assigned |

|    |   |
|----|---|
| CG | Heller, et al., "Generation by limited proteolysis of a catalytically active 39-kDa protein from the 115-kDa form of phosphatidylinositol-glycan-specific phospholipase D from bovine serum", Eur. J. Biochem., vol. 224, pp 823-833, 1994.                                     |
| CH | Li, et al., "Structural Features of GPI-specific Phospholipase D Revealed by Proteolytic Fragmentation and Ca <sup>2+</sup> Binding Studies", Journal of Biological Chemistry, vol. 269, no. 46, Issue of November 18, pp 28963-28971, 1994.                                    |
| CI | LeBoeuf, et al., "Mouse Glycosylphosphatidylinositol-specific phospholipase D ( <i>Gpld1</i> ) characterization", Mammalian Genome vol. 9, pp 710-714, 1998.  |
| CJ | Aleman, et al., "Phospho-dephospho-control by insulin is mimicked by a phospho-oligosaccharide in adipocytes", Nature, vol. 330, November 5, 1987, pp 77-79.  |
| CK | Thompson, et al., "CLUSTAL W: improving the sensitivity of progressive multiple sequence alignment through sequence weighting, position-specific gap penalties and weight matrix choice", Nucleic Acids Research, vol. 22, no. 22, pp 4673-4680, 1994.                          |
| CL | Vicent, et al., "Alterations in Skeletal Muscle Gene Expression of <i>ob/ob</i> Mice by mRNA Differential Display", Diabetes, vol. 47, pp 1451-1458, September 1998.  |
| CM | Maguire, et al., "Glycosyl phosphatidyl inositol phospholipase D activity in human serum", Ann. Clin. Biochem., vol 32, pp 74-78, 1995.   |
| CN | Huang, et al., "Chiroinositol Deficiency and Insulin Resistance. III. Acute Glycogenic and Hypoglycemic Effects of Two Inositol Phosphoglycan Insulin mediators In Normal and Streptozotocin-Diabetic Rats <i>in Vivo</i> ", Endocrinology, vol. 132, no. 2, pp. 652-657, 1993. |
| CO | Hoener, et al., "Phosphatidylinositol-glycan-specific phospholipase D is an amphiphilic glycoprotein that in serum is associated with high-density lipoproteins", Eur. J. Biochem., vol. 206, pp 747-757, 1992.   |
| CP | Lin et al. "Possible Role of Glycosyl-Phosphatidylinositol (GPI) Anchor Hydrolysis in IgE-Dependent Activation of a Rat Mast (RBL2H3) Cell Line", J. Biol. Chem., Vol. 115, p 220a, 1991.   |
| CQ | M.A. Deeg, "GPI-specific phospholipase D as an apolipoprotein", Brazilian J Med Biol. Res, vol. 27, pp 375-381, 1994.   |
| CR | Brewer, et al., "Isolation and Characterization of Apolipoproteins A-I, A-II, and A-IV", Methods in Enzymology, vol 128, pp 223-246, 1986.  |

|           |       |
|-----------|-------|
| EXAMINER: | DATE: |
|           |       |



|   |                                       |                            |
|---|---------------------------------------|----------------------------|
| FORM PTO-1449<br>INFORMATION DISCLOSURE STATEMENT | ATTY DOCKET NO.                       | SERIAL NO.                 |
|   | 55908 (46322)                         | 09/868,879                 |
|   | APPLICANT(S) Julian Schofield, et al. |                            |
|   | FILING DATE 22 June 2001              | GROUP NO. Not Yet Assigned |

|     |  |
|-----|--|
| CS  | Hoener, et al., "Glycosyl-phosphatidylinositol-specific phospholipase D Interaction with and stimulation by apolipoprotein A-I", FEBS, vol. 327, no. 2, pp 203-206, 1993.  |
| CT  | Schofield, et al., "Structure and expression of the human glycosylphosphatidylinositol phospholipase D1 ( <i>GPLD1</i> ) gene", Biochimica et Biophysica Acta, vol. 1494, pp 189-194, 2000.                      |
| CU  | Rhode, et al., "Glycosylphosphatidylinositol-specific phospholipase D in blood serum: Is the liver the only source of enzyme?", Clinica Chimica Acta, vol. 281, pp 127-145, 1999.                                |
| CV  | Wilhelm, et al., "Cellular Glycosylphosphatidylinositol-Specific Phospholipase D Regulates Urokinase Receptor Shedding and Cell Surface Expression", Journal of Cellular Physiology, vol. 180, pp 225-235, 1999. |
| CW  | Jones, et al., "The role of glycosyl-phosphatidylinositol in signal transduction", The International Journal of Biochemistry & Cell Biology, vol. 30, pp 313-326, 1998.  |
| CX  | Nazih-Sanderson, et al., "HDL <sub>3</sub> -signalling in HepG <sub>2</sub> cells involves glycosyl-phosphatidylinositol-anchored proteins", Biochimica et Biophysica Acta, vol. 1346, pp 45-60, 1997.           |
| CY  | Jones, et al., "Interleukin-2 stimulates a late increase in phosphatidic acid production in the absence of phospholipase D activation", FEBS, vol. 433, pp 23-27, 1998.  |
| CZ  | Küng, et al., "Expression of intracellular and GPI-anchored forms of GPI-specific phospholipase D in COS-1 cells", Biochimica et Biophysica Acta, vol. 1357, pp 329-338, 1997.                                   |
| CCA | Stadelmann, et al., "The C-terminus of glycosylphosphatidylinositol-specific phospholipase D is essential for biological activity", Biochimica et Biophysica Acta, vol. 1355, pp 107-113, 1997.                  |
| CCB | Hari, et al., "Uptake and intracellular stability of glycosylphosphatidylinositol-specific phospholipase D in neuroblastoma cells", Biochimica et Biophysica Acta, vol. 1355, pp 293-302, 1997.                  |
| CCC | Hari, et al. "Subcellular distribution of glycosylphosphatidylinositol-specific phospholipase D in rat liver", Biochem. J., vol. 320, pp 315-319, 1996.  |
| CCD | Deng, et al., "Hydrolysis of membrane-bound liver alkaline phosphatase by GPI-PLD requires bile salts", American Physiological Society, pp G655-G663, 1996.  |
| CCE | Deeg, et al., "Glycosylphosphatidylinositol-Phospholipase D: A Tool for Glycosylphosphatidylinositol Structural Analysis", Methods in Enzymology, vol. 250, 1995.  |

|           |       |
|-----------|-------|
| EXAMINER: | DATE: |
|           |       |



|   |  |  |                                   |
|---|--|--|-----------------------------------|
| <b>FORM PTO-1449</b>                    |  | <b>ATTY DOCKET NO.</b>                       | <b>SERIAL NO.</b>                 |
| <b>INFORMATION DISCLOSURE STATEMENT</b> |  | 55908 (46322)                                | 09/868,879                        |
|   |  | <b>APPLICANT(S)</b> Julian Schofield, et al. |                                   |
|   |  | <b>FILING DATE</b> 22 June 2001              | <b>GROUP NO.</b> Not Yet Assigned |

|     |  |
|-----|--|
| CCF | Hanada, et al., "Both Sphingolipids and Cholesterol Participate in the Detergent Insolubility of Alkaline Phosphatase a Glycosylphosphatidylinositol-anchored Protein, in Mammalian Membranes", The Journal of Biological Chemistry, vol. 270, no. 11, pp 6254-6260, March 17, 1995. |
| CCG | Clemente, et al., "Role of Glycosyl-Phosphatidylinositol Hydrolysis as a Mitogenic Signal for Epidermal Growth Factor", Cellular Signalling, vol. 7, no. 4, pp 411-421, 1995.  |
| CCH | Lisanti, et al., "Caveolae, transmembrane signalling and cellular transformation", Molecular Membrane Biology, Vol. 12, pp 121-124, 1995.  |
| CCI | Patrick J. Casey, "Protein Lipidation in Cell Signaling", Science, vol. 268, pp 221-225, April 14, 1995.   |
| CCJ | Xie, et al., "Streptolysin-O induces release of glycosylphosphatidylinositol-anchored alkaline phosphatase from ROS cells by vesiculation independently of phospholipase action", Biochem. J., vol. 305, pp 529-537, 1995.   |
| CCK | Stadelmann, et al. "Distribution of glycosylphosphatidylinositol-specific phospholipase D mRNA in bovine tissue sections", Cell Tissue Res., vol. 274, pp 547-552, 1993.   |
| CCL | Brunner, et al., "An Endogenous Glycosylphosphatidylinositol-Specific Phospholipase D Releases Basic Fibroblast Growth Factor-Heparan Sulfate Proteoglycan Complexes From Human Bone Marrow Cultures", Blood, vol 83, no. 8 pp 2115-2125, April 15, 1994.                            |
| CCM | Xie, et al., "Expression and secretion of glycosylphosphatidylinositol-specific phospholipase D by myeloid cell lines" Biochem J., vol. 297, pp 547-554, 1994.   |
| CCN | Metz, et al., "Release of GPI-anchored membrane proteins by a cell-associated GPI-specific phospholipase D" The EMBO Journal, vol. 13, no. 7, pp 1741-1751, 1994.  |
| CCO | Brodbeck, et al., "GPI anchor-hydrolyzing phospholipases", Brazilian J Med. Biol. Res., vol. 27, pp 369-374, 1994.   |
| CCP | Bergman, et al., "Saponin-induced release of cell-surface anchored Thy-1 by serum glycosylphosphatidylinositol-specific phospholipase D", Biochem J, vol. 298, pp 661-668, 1994.   |
| CCQ | Müller, et al., "Membrane Association of Lipoprotein Lipase and a cAMP-Binding Ectoprotein in Rat Adipocytes" Biochemistry, vol. 33, pp 12149-12159, 1994.   |
| CCR | Raymond, et al., "Inositol-specific phospholipase D activity in health and disease", Clinical Science, vol. 86, pp 447-451, 1994.  |

|                  |              |
|------------------|--------------|
| <b>EXAMINER:</b> | <b>DATE:</b> |
|                  |              |



|   |  |                                       |                            |
|---|--|---------------------------------------|----------------------------|
| FORM PTO-1449<br>INFORMATION DISCLOSURE STATEMENT |  | ATTY DOCKET NO.                       | SERIAL NO.                 |
|   |  | 55908 (46322)                         | 09/868,879                 |
|   |  | APPLICANT(S) Julian Schofield, et al. |                            |
|   |  | FILING DATE 22 June 2001              | GROUP NO. Not Yet Assigned |

|      |  |
|------|--|
| CCS  | Mackness, et al., "HDL, its enzymes and its potential to influence lipid peroxidation", Atherosclerosis, vol. 115, pp 243-253, 1995.   |
| CCT  | Romero, et al., "Insulin Mediators and the Mechanism of Insulin Action", Advances in Pharmacology, vol. 24, pp. 21-50, 1993.   |
| CCU  | Low, et al., "Phosphatidic Acid, Lysophosphatidic Acid, and Lipid A Are Inhibitors of Glycosylphosphatidylinositol-specific Phospholipase D", The Journal of Biological Chemistry, vol 268, no. 12, pp 8480-8490, April 25, 1993.                    |
| CCV  | Richard G.W. Anderson, "Caveolae: Where incoming and outgoing messengers meet", Proc. Natl. Acad. Sci., vol. 90, pp 10909-10913, December 1993.  |
| CCW  | Heller, et al., "A novel form of glycosylphosphatidylinositol-anchor converting activity with a specificity of a phospholipase D in mammalian liver membranes", Biochimica et Biophysica Acta. Vol. 1109, pp 109-116, 1992.                          |
| CCX  | Metz, et al., "Immunolocalization of a Glycosylphosphatidylinositol-specific Phospholipase D in Mast Cells Found in Normal Tissue and Neurofibromatosis Lesions", American Journal of Pathology, vol. 140, no. 6, pp 1275-1281, June 1992.           |
| CCY  | Metz, et al. "Characterization of the Plasma Glycosylphosphatidylinositol-Specific Phospholipase D (GPI-PLD), Cell Biology International Reports, vol. 15, no. 9, pp 875-882, 1991.  |
| CCZ  | Metz, et al.; "Production of the Glycosylphosphatidylinositol-specific Phospholipase D by the Islets of Langerhans", The Journal of Biological Chemistry, Vol. 266, pp. 17733-17736, September 25, 1991.   |
| CCCA | Cardoso de Almeida, et al., "Identification of an Acid-Lipase in Human Serum which is capable of Solubilizing Glycophosphatidylinositol-Anchored Proteins", Biochemical and Biophysical Research Communications, Vol. 150, No. 1, pp. 476-482, 1988. |
| CCCB | Davitz, et al., "A Glycan-Phosphatidylinositol-Specific Phospholipase D in Human Serum", Science Vol. 2, pp.81-84, October 1987.   |
| CCCC | Davitz, et al., "Purification of a Glycosyl-Phosphatidylinositol-specific Phospholipase D from Human Plasma", The Journal of Biological Chemistry, Vol. 264, No. 23, pp. 13760-13764, 1989.  |
| CCCD | Michael A. J. Ferguson, "Lipid anchors on membrane proteins", Current Opinion in Structural Biology, Vol. 1, pp. 522-529, 1991.  |

|           |       |
|-----------|-------|
| EXAMINER: | DATE: |
|           |       |



|   |      |  |                            |
|---|------|--|----------------------------|
| FORM PTO-1449<br>INFORMATION DISCLOSURE STATEMENT |      | ATTY DOCKET NO.  | SERIAL NO.                 |
|   |      | 55908 (46322)  | 09/868,879                 |
|   |      | APPLICANT(S) Julian Schofield, et al.  |                            |
|   |      | FILING DATE 22 June 2001   | GROUP NO. Not Yet Assigned |
|   | CCCE | Hereld, et al., "A Phospholipase C from <i>Trypanosoma brucei</i> which Selectively Cleaves the Glycolipid on the Variant Surface Glycoprotein", The Journal of Biological Chemistry, Vol. 261, No. 29, pp. 13613-13819, October 15, 1986. |                            |
|   | CCCF | Bülow, et al., "Purification and Characterization of the Membrane-form Variant Surface Glycoprotein Hydrolase of <i>Trypanosoma brucei</i> ", The Journal of Biological Chemistry, Vol. 261, No. 25, Sept. 5, 1986, pp. 11918-11923.       |                            |
|   | CCCG | Huang, et al., "Purification and Characterization of Glycosyl-phosphatidylinositol-specific Phospholipase D", The Journal of Biological Chemistry, Vol. 265, No. 29, Oct. 15, 1990, pp. 17738-17745.                                       |                            |
|   | CCCH | Martin G. Low, "The glycosyl-phosphatidylinositol anchor of membrane proteins", Biochimica et Biophysica Acta, Vol. 988, pp. 427-454, 1989.  |                            |
|   | CCCI | Low, et al., "A phospholipase D specific for the phosphatidylinositol anchor of cell-surface proteins is abundant in plasma", Proc. Natl. Acad. Sci. USA, Vol. 85, pp. 980-984, February 1988.   |                            |
|   | CCCJ | Low, et al., "Factors affecting the ability of glycosylphosphatidylinositol-specific phospholipase D to degrade the membrane anchors of cell surface proteins", Biochem. J., Vol. 279, pp. 483-493, 1991.                                  |                            |
|   | CCCK | Stieger, et al., "Enzymatic properties of phosphatidylinositol-glycan-specific phospholipase C from rat liver and phosphatidylinositol-glycan-specific phospholipase D from rat serum", FEBS 1991  |                            |
|   | CCCL | Xie, et al., "Glycosylphosphatidylinositol-specific phospholipase D is localized in keratinocytes", The American Physiological Society, pp. C1156-C1168, 1993.   |                            |
|   | CCCM | Tsang, et al., "Isolation and expression of two human glycosylphosphatidylinositol phospholipase D (GPI-PLD) cDNAs", EMBL Database, Heidelberg, FRG ascension number L11702; FASEB J. (Supp), 6, A1922.                                    |                            |

#176166

|           |       |
|-----------|-------|
| EXAMINER: | DATE: |
|           |       |